that modifications and variations may be resorted to. without departing from the spirit and scope of the invention. as those skilled in the art would readily understand. These modifications and variations are considered to be within the scope of the appended claims.

All of the above-mentioned patents and publications are incorporated herein by reference.

What is claimed is:

1. A process for producing a closed cell polymer foam. said process comprising subjecting a foamable polymer composition comprising: (a) a predominant proportion of an optionally rubber-reinforced alkenyl aromatic polymer; and an additive for (a) comprising: (b) alpha-methylstyrene; and (c) a rubbery block copolymer to a temperature sufficient to provide a molten polymer: mixing a blowing agent with said molten polymer: heating the mixture to a temperature and applying pressure such that the mixture does not foam: thereafter reducing the temperature of the mixture; and extruding the mixture.

2. A process according to claim 1. wherein the optionally rubber reinforced alkenyl aromatic polymer (a) is comprised of styrene.

3. A process according to claim 1. wherein the optionally rubber-reinforced alkenyl aromatic polymer (a) is comprised of a copolymer or interpolymer of styrene containing greater than 75 weight pent styrene.

4. A process according to claim 1. wherein the optionally rubber-reinforced alkenyl aromatic polymer (a) is comprised of a blend of styrene and a rubbery polymer.

5. A process according to claim 1. wherein the alpha-methyl styrene (b) has a Vicat softening temperature of between 45 and 82 at 50° C./hr. rise.

6. A process according to claim 5. wherein the alpha-methylstyrene (b) is selected from the group consisting of: a linear homopolymer of alpha-methylstyrene having a molecular weight of about 685. a softening point of about 99° C.. and a flash point of about 210° C.. a linear homopolymer of alpha-methylstyrene having a molecular weight of about 790. a softening point of about 118° C.. and a flash point of about 224° C.. and a linear homopolymer of alpha-methylstyrene having a molecular weight of about 960. a softening point of about 141° C.. and a flash point of about 246° C.

7. A process according to claim 1. wherein the rubbery block copolymer (c) is selected from the group consisting of A-B. A-B-A. A-B-A-B. graft and radial block copolymers.

8. A process according to claim 7. wherein the rubbery block copolymer (c) is selected from the group consisting of: a styrene-butadiene-styrene block copolymer having a styrene/rubber ratio of about 31/69 (Kraton D-1101); a styrene-butadiene-styrene block copolymer having a styrene/rubber ratio of about 28/72 (Kraton D-1102); a styrene-isoprene-styrene block copolymer having a styrene/rubber ratio of about 14/86 (Kraton D-1107); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 29/71 (Kraton G-1650); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 32/68 (Kraton G-1651); a styrene-ethylene/butylene styrene block copolymer having a styrene/rubber ratio of about 29/71 and a ring and ball softening point (ASTME 28-67. 10% by weight in Kaydol oil) of about 141° F. (Kraton G-1652); a styrene-ethylene/

butylene-styrene block copolymer having a styrene/rubber ratio of about 13/87 (Kraton G-1657X); a styrene-ethylene/propylene block copolymer having a styrene/rubber ratio of about 37/63 (Kraton G-1701X); and a styrene-ethylene/butylene block copolymer having a styrene/rubber ratio of about 30/70 (Kraton G-1726X).

9. A process according to claim **8**. wherein the rubbery block copolymer (c) is selected from the group consisting of: a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 29/71 (Kraton G-1650) and a styrene-ethylene/butylene styrene block copolymer having a styrene/rubber ratio of about 29/71 and a ring and ball softening point (ASTME 28-67. 10% by weight in Kaydol oil) of about 141° F. (Kraton G-1652).

10. A process according to claim **1**. wherein the blowing agent comprises a mixture of (1) one or more solid organic acids and (2) an alkaline metal carbonate or alkaline metal bicarbonate.

11. A process according to claim **10**. wherein the one or more solid organic acids is selected from the group consisting of oxalic acid. succinic acid. adipic acid. phthalic acid and citric acid.

12. A process according to claim **10**. wherein the alkaline metal carbonate or alkaline metal bicarbonate is selected from the group consisting of sodium carbonate. potassium carbonate and sodium bicarbonate.

13. A process according to claim **10**. wherein the alkali-:acid equivalent ratios are from about 1:3 to about 3:1.

14. A process according to claim **13**. wherein the alkali-:acid equivalent ratio is from about 0.7:1 to 1.3:1.

15. A process according to claim **10**. wherein the blowing agent is comprised of a combination of monosodium citrate and sodium bicarbonate.

16. A process according to claim **15**. wherein the combination of monosodium citrate and sodium bicarbonate are encapsulated in vegetable oil and the alkali:acid equivalent ratio is from about 0.9:1 to about 1.1:1.

17. A process for producing a closed-cell polymer foam. said process comprising subjecting a foamable polymer composition comprising: (a) an optionally rubber-reinforced alkenyl aromatic polymer comprised of a copolymer or interpolymer of styrene-containing greater than 50 weight percent styrene; and an additive for (a) comprising: (b) alpha-methylstyrene; and (c) a rubbery block copolymer to a temperature sufficient to provide a molten polymer; mixing a blowing agent with said molten polymer; heating the mixture to a temperature and applying pressure such that the mixture does not foam; thereafter reducing the temperature of the mixture; and extruding the mixture.

18. A process for producing a closed-cell polymer foam. said process comprising subjecting a foamable polymer composition comprising: (a) an optionally rubber-reinforced alkenyl aromatic polymer; comprised of a blend of styrene and a rubbery polymer; and an additive for (a) comprising: (b) alpha-methylstyrene; and (c) a rubbery block copolymer to a temperature sufficient to provide a molten polymer; mixing a blowing agent with said molten polymer; heating the mixture to a temperature and applying pressure such that the mixture does not foam; thereafter reducing the temperature of the mixture; and extruding the mixture.

19. An additive suitable for use in a foamable polymer composition, said additive comprising alpha-methylstyrene and a rubbery block copolymer.

20. An additive according to claim 19 further comprising a blowing agent.

21. An additive according to claim 20, wherein the blowing agent comprises a mixture of (1) one or more solid organic acids and (2) an alkaline metal carbonate or alkaline metal bicarbonate.

22. An additive according to claim 21, wherein the one or more solid organic acids is selected from the group consisting of oxalic acid, succinic acid, adipic acid, phthalic acid and citric acid.

23. An additive according to claim 21, wherein the alkaline metal carbonate or alkaline metal bicarbonate is selected from the group consisting of sodium carbonate, potassium carbonate and sodium bicarbonate.

24. An additive according to claim 21, wherein the alkali:acid equivalent ratios are from about 1:3 to about 3:1.

25. An additive according to claim 24, wherein the alkali:acid equivalent ratio is from about 0.7:1 to 1.3:1.

26. An additive according to claim 21, wherein the blowing agent is comprised of a combination of monosodium citrate and sodium bicarbonate.

27. An additive according to claim 26, wherein the combination of monosodium citrate and sodium bicarbonate are encapsulated in vegetable oil and the alkali:acid equivalent ratio is from about 0.9:1 to about 1.1:1.

28. An additive according to claim 19, wherein the alpha-methylstyrene has a Vicat softening temperature of between 45 and 82 at 50°C/hr. rise.

29. An additive according to claim 28, wherein the alpha-methylstyrene is selected from the group consisting of: a linear homopolymer of alpha-methylstyrene having a molecular weight of about 685, a softening point of about 99°C, and a flash point of about 210°C, a linear homopolymer of alpha-methylstyrene having a molecular weight of about 790, a softening point of about 118°C, and a flash point of about 224°C, and a linear homopolymer of alpha-methylstyrene having a molecular weight of about 960, a softening point of about 141°C, and a flash point of about 246°C.

30. An additive according to claim 19, wherein the rubbery block copolymer is selected from the group consisting of A-B, A-B-A, A-B-A-B, graft and radial block copolymers.

31. An additive according to claim 30, wherein the rubbery block copolymer is selected from the group consisting of: a styrene-butadiene-styrene block copolymer having a styrene/rubber ratio of about 31/69 (Kraton D-1101); a styrene-butadiene-styrene block copolymer having a styrene/rubber ratio of about 28/72 (Kraton D-1102); a styrene-isoprene-styrene block copolymer having a styrene/rubber ratio of about 14/86 (Kraton D-1107); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 29/71 (Kraton G-1650); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber

ratio of about 32/68 (Kraton G-1651); a styrene-ethylene/butylene styrene block copolymer having a styrene/rubber ratio of about 29/71 and a ring and ball softening point (ASTME 28-67, 10% by weight in Kaydol oil) of about 141°F (Kraton G-1652); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 13/87 (Kraton G-1657X); a styrene-ethylene/propylene block copolymer having a styrene/rubber ratio of about 37/63 (Kraton G-1701X); and a styrene-ethylene/butylene block copolymer having a styrene/rubber ratio of about 30/70 (Kraton G-1726X).

32. An additive according to claim 31, wherein the rubbery block copolymer is selected from the group consisting of: a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 29/71 (Kraton G-1650) and a styrene-ethylene/butylene styrene block copolymer having a styrene/rubber ratio of about 29/71 and a ring and ball softening point (ASTME 28-67, 10% by weight in Kaydol oil) of about 141°F (Kraton G-1652).

33. A foamable polymer composition comprising: (a) an optionally rubber-reinforced alkenyl aromatic polymer and an additive for (a) comprising: (b) alpha-methylstyrene; and (c) a rubbery block copolymer.

34. A foamable polymer composition according to claim 33, wherein the optionally rubber reinforced alkenyl aromatic polymer (a) is comprised of styrene.

35. A foamable polymer composition according to claim 33 wherein the optionally rubber-reinforced alkenyl aromatic polymer (a) is comprised of a copolymer or interpolymer of styrene containing greater than 75 weight percent styrene.

36. A foamable polymer composition according to claim 33 wherein the optionally rubber–reinforced alkenyl aromatic polymer (a) is comprised of a copolymer or interpolymer of styrene containing greater than 50 weight percent styrene.

37. A foamable polymer composition according to claim 33 wherein the optionally rubber-reinforced alkenyl aromatic polymer (a) is comprised of a blend of styrene and a rubbery polymer.

38. A foamable polymer composition according to claim 33 wherein the alpha-methyl styrene (b) has a Vicat softening temperature of between 45 and 82 at 50°C./hr.rise.

39. A foamable polymer composition according to claim 33 wherein the alpha-methylstyrene (b) is selected form the group consisting of: a linear homopolymer of alpha-methylstyrene having a molecular weight of about 685, a softening point of about 99°C, and a flash point of about 210°C, a linear homopolymer of alpha-methylstyrene having a molecular weight of about 790, a softening point of about 118°C, and a flash point to about 224°C, and a linear homopolymer of alpha-methylstyrene having a molecular weight of about 960, a softening point of about 114°C, and a flash point of about 246°C.

40. A foamable polymer composition according to claim 33 wherein the rubbery block copolymer (c) is selected from the group consisting of A-B, A-B-A, A-B-A-B, graft and radial block copolymers.

41. A foamable polymer composition according to claim 40 where the rubbery block copolymer (c) is selected form the group consisting of: a styrene-butadiene-styrene block copolymer having a styrene/rubber ratio of about 31/69 (Kraton D-1101); a styrene-butadiene-

styrene block copolymer having a styrene/rubber ratio of about 28/72 (Kraton D-1102); a styrene-isoprene-styrene block copolymer having a styrene/rubber ratio of about 14/86 (Kraton D-1107); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of 29/71 (Kraton G-1650); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 32/68 (Kraton G-1651); a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 29/71 and a ring and ball softening point (ASTME 28-67, 10% by weight in Kaydol oil) of about 141°F (Kraton G-1652): a a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 13/87 (Kraton G-1657X); a styrene-ethylene/propylene block copolymer having a styrene/rubber ratio of about 37/63 (Kraton G-1701X); and a styrene-ethylene/butylene block copolymer having a styrene/rubber ratio of about 30/70 (Kraton G-1726X).

42. A foamable polymer composition according to claim 41 wherein the rubbery block copolymer (c) is selected from a group consisting of: a styrene-ethylene/butylene-styrene block copolymer having a styrene/rubber ratio of about 29/71 (Kraton G-1650) and a styrene-ethylene/butylene-styrene block copolymer having a syrene/rubber ratio of about 29/71 and a ring and ball softening point (ASTME 28-67, 10% by weight in Kaydol oil) of about 141°F (Kraton G-1952).

43. A foamable polymer composition according to claim 33 further comprising a blowing agent.

44. A foamable polymer composition according to claim 43 wherein the blowing agent comprises a mixture of (1) one or more solid organic acids and (2) an alkaline metal carbonate or alkaline metal bicarbonate.

45. A foamable polymer composition according to claim 44 wherein the one or more solid organic acid is selected from the group consisting of oxalic acid, succinic acid, adipic acid, phthalic acid and citric acid.

46. A foamable polymer composition according to claim 44 wherein the alkaline metal carbonate or alkaline metal bicarbonate is selected form a group consisting of sodium carbonate, potassium carbonate and sodium bicarbonate.

47. A foamable polymer composition according to claim 44 wherein the alkali:acid equivalent ratios from about 1:3 to about 3:1.

48. A foamable polymer composition according to claim 47 wherein the alkali:acid equivalent ratio is from about 0.7:1 to about 1.3:1.

49. A foamable polymer composition according to claim 44 wherein the blowing agent is comprised of a combination of monosodium citrate and sodium bicarbonate.

50. A foamable polymer composition according to claim 49 wherein the combination of monosodium citrate and sodium bicarbonate are encapsulated in vegetable oil and the alkali:acid equivalent ratio is from about 0.9:1 to about 1.1:1.